IN THE CLAIMS:

Please amend claims 1 and 11, and cancel claim 4 as follows:

CLAIMS

1. (Currently Amended) A sensor, comprising:

a silicon substrate having a source region, a drain region and a capacitive well;

a floating gate disposed on the silicon substrate to form a field effect transistor with the source region and drain region;

an insulating layer that separates the floating gate and a hybrid mounted top electrode having a sensitive layer formed on an underside thereof, where the sensitive layer and the insulating layer form an air gap; and

a layer of hydrophobic material on a surface of the insulating layer within the air gap ~~a plurality of components containing silicon and having a sensitive detection element, where electrical signals are read by a silicon semiconductor system, where the components containing silicon are coated with a layer of hydrophobic material~~.

2. (Previously Presented) The sensor of claim 1, where the hydrophobic layer comprises molecular chains that form a stable bond to silicon.

3. (Previously Presented) The sensor of claim 2, where the molecular chains form a monolayer.

4. (Cancelled)

5. (Previously Presented) The sensor of claim 1, where the silicon semiconductor system comprises a field effect transistor.

6. (Previously Presented) The sensor of claim 1, where the sensor comprises a sensor from the group including a gas sensor, a pressure sensor, and an acceleration sensor.

7. (Withdrawn) A method for producing a gas sensor with a gas-sensitive layer integrated in a field effect transistor (FET) with components containing silicon, on which layer electrical signals corresponding to a target gas that is present are read by the FET, the method comprising the steps of:

coating a plurality of components containing silicon with a hydrophobic layer by silanization; and

mounting additional components belonging to the FET.

8. (Withdrawn) The method of claim 6, where a silane is used for the silanization.

9. (Withdrawn) The method of claim 7, where a trichlorosilane is used for the silanization.

10. (Withdrawn) The method of claim 8, where an n-octadecyltrichlorosilane ($C_{18}H_{37}Cl_3Si$) is used for the silanization.

11. (Currently Amended) A sensor, comprising:

at least one component containing silicon and having a sensitive detection element; and

a floating gate coupled to at least one of the components containing silicon;

a silicon substrate having a source region, a drain region and a capacitive well, where the source region, the drain region and floating gate form a field effect transistor; and

where the at least one component containing silicon includes a coating layer of hydrophobic material.

12. (Previously Presented) The sensor of claim 11, where the hydrophobic coating layer comprises molecular chains that form a stable bond to silicon.

13. (Previously Presented) The sensor of claim 12, where the molecular chains form a monolayer.

14. (Previously Presented) The sensor of claim 11, where the sensor comprises a gas sensor.

15. (Previously Presented) The sensor of claim 11, where the sensor comprises a pressure sensor.

16. (Previously Presented) The sensor of claim 11, where the sensor comprises an acceleration sensor.

17. (Previously Presented) The sensor of claim 11, where the hydrophobic coating layer is applied by silanization.

18. (Previously Presented) The sensor of claim 17, where a silane is used for the silanization.

19. (Previously Presented) The sensor of claim 17, where a trichlorosilane is used for the silanization.

20. (Previously Presented) The sensor of claim 17, where an n-octadecyltrichlorosilane ($C_{18}H_{37}Cl_3Si$) is used for the silanization.